



GOVERNMENT OF INDIA
TARIFF COMMISSION

R E P O R T
ON

The Continuance of Protection to the
Electric Motor Industry

सत्यमेव जयते

BOMBAY 1961

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GOVERNMENT OF INDIA
MINISTRY OF COMMERCE AND INDUSTRY

New Delhi, the 26th October, 1961.

NOTIFICATION

Tariffs

No. 11(1)-T.R./61.—In exercise of the powers conferred by sub-section (1) of section 3A of the Indian Tariff Act, 1934 (32 of 1934), as in force in India and as applied to the State of Pondicherry, the Central Government hereby directs that with immediate effect there shall be levied on the articles specified in column (1) of the Table hereto annexed, when imported into India or the said State, a duty of customs of such amount as is specified in the corresponding entry in column (2) thereof.

THE TABLE

Name of article	Amount of duty of customs [inclusive of the duty chargeable under sub-section (1) of section 2 of the Indian Tariff Act, 1934]
1	2
The component parts of following electric motors but excluding control gear for the same :	20 per cent <i>ad valorem</i>

(i) squirrel cage induction motors and slip ring motors above 100 but not exceeding 500 brake-horse-power;

(ii) single phase motors of a brake-horse-power not exceeding 3 but not less than one brake-horse-power;

(iii) fractional horse-power-motors (other than squirrel cage induction motors) of not less than one-quarter of one brake-horse-power;

provided that only such articles shall be deemed to be component parts as are essential for the working of the electric motors and have been given for that purpose some special shape or quality which would not be essential for their use for any other purpose.

B. N. ADARKAR,
Joint Secretary to the Government of India.

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GOVERNMENT OF INDIA
MINISTRY OF COMMERCE AND INDUSTRY

New Delhi, the 26th October, 1961

RESOLUTION

Tariffs

No. 11(1)-T.R./61.—The Tariff Commission has submitted its Report on the continuance of protection to the Electric Motor Industry on the basis of an inquiry undertaken by it under Sections 11(e) and 13 of the Tariff Commission Act, 1951. Its recommendations are as follows:—

- (1) Protection to the electric motor industry should be continued for a further period of two years ending 31st December, 1963. Protection should cover (i) squirrel cage and slip ring motors of 1 to 500 h.p., (excluding variable speed commutator motors), (ii) single phase motors of 1 to 3 h.p., (iii) fractional h.p. motors, and (iv) component parts of the above mentioned motors.
- (2) The protective duty applicable to squirrel cage and slip ring motors of 1 to 500 h.p., (excluding variable speed commutator motors), single phase motors of 1 to 3 h.p. and fractional h.p. motors of not less than $\frac{1}{4}$ h.p. should be 15 per cent *ad valorem*.
- (3) The protective duty on component parts of the electric motors mentioned in recommendation (2) above should be 20 per cent *ad valorem*.
- (4) The existing revenue duty of 35 per cent *ad valorem* on fractional h.p. motors of less than $\frac{1}{4}$ h.p. and component parts of such motors should be converted into an equivalent protective duty.
- (5) Government should give all possible assistance to the electric motor industry to work double shift especially by ensuring adequate supply of raw materials.
- (6) Government should encourage the manufacturers of electric motors to use aluminium cast rotors and for this purpose assist the industry to procure the necessary equipment.
- (7) Government should carefully assess the demand for fractional h.p. motors and production capacity of the industry in both sectors for manufacture of such motors before issuing import licences.

(iv)

- (8) Government should take steps to enable the electric motor industry to shorten its delivery periods by allowing imports of necessary raw materials or otherwise.
- (9) The Development Commissioner for Small Scale Industries, in consultation with the Directors of Industries in the States, should take necessary steps to improve the present arrangements for distributing raw materials to the small scale units.
- (10) Steps to establish additional capacity for the manufacture of stampings should be expedited.
- (11) Manufacturers of electric motors should expedite measures to change over to class 'E' insulation without further delay.

2. Government accept recommendations (1) to (4). The duty recommended by the Commission in respect of component parts of Electric Motors not hitherto covered by the scheme of protection is being brought into force with immediate effect by notification published separately in the Gazette of today. The necessary legislation will also be undertaken in due course.

3. Government have taken note of recommendations (5) to (9) and steps will be taken to implement them to the extent possible.

4. The attention of the manufacturers concerned is invited to recommendations (10) and (11).

ORDER

ORDERED that a copy of the Resolution be communicated to all concerned and that it be published in the *Gazette of India*.

B. N. ADARKAR,
Joint Secretary to the Government of India.

REPORT ON THE CONTINUANCE OF PROTECTION TO THE ELECTRIC MOTOR INDUSTRY

1. Protection to the electric motor industry has been the subject of inquiry by the Tariff Board or Tariff Commission four times since 1948. During the first period of three years of protection the protective duty was 10 per cent

Previous tariff inquiries *ad valorem* and covered all categories of motors and their component parts. The range of pro-

tection for the second period was limited to motors of 1 to 20 h.p. only and the protective duty recommended at 10 per cent *ad valorem* till 1955. For the next two periods, covered by our reports of 1955 and 1958, the protective duty was fixed at 15 per cent *ad valorem* and covered squirrel cage motors of $\frac{1}{4}$ to 100 h.p. and slip ring motors of 1 to 100 h.p. excluding flame proof motors and variable speed commutator motors. In 1954, the protective duty on components was, however, increased to 20 per cent *ad valorem*.

2. Protection granted to the electric motor industry is due to expire on 31st December, 1961. The present inquiry was undertaken by

Present inquiry us in pursuance of Section 11(e) read with Section 13 of the Tariff Commission Act, 1951 which empowers us to inquire into and report

on any further action required in relation to the protection granted to an industry with a view to its increase, decrease, modification or abolition according to the circumstances of the case.

3.1. Questionnaires were sent to producers, importers and consumers of electric motors on 22nd November, 1960. A press com-

Method of inquiry munique was also issued on the same day inviting those interested in the inquiry to obtain copies of the relevant questionnaires and fur-

nish replies. The Development Wing was requested to furnish a memorandum on the present position of the industry. The Development Commissioner, Small-Scale Industries was requested to furnish information regarding the small-scale sector of the industry. The Directors of industries in the States where the electric motor manufacturing units are located were addressed for information regarding, *inter alia*, the availability of raw materials and assistance, if any, rendered by them to this industry. All the State Governments were requested to give their views on the question of continuance of protection to the industry. Memoranda were also called for from the Indian Electrical Manufacturers' Association, Calcutta and the Small-Scale Electric Motor Manufacturers' Association, Bombay. Information regarding c.i.f. prices and landed costs of imported electric motors was called for from principal importers and the Collectors of Customs at the ports. Letters were

issued to the Iron and Steel Controller, the Director General of Supplies and Disposals, the National Physical Laboratory, the Central Mining Research Station, the Government Test House, the Indian Standards Institution and the manufacturers of principal raw materials asking for information on specific points. A list of those to whom questionnaires/letters were issued and from whom replies or memoranda were received is given in Appendix I.

3.2. We visited a few large-scale and also small-scale units manufacturing electric motors. Our Cost Accounts Officers undertook the examination of cost of production of electric motors at three factories. A list of the factories visited by us and by our Officers is given in Appendix II.

3.3. A public inquiry into this industry was held on 28th February, 1961 at the Commission's Office in Bombay. A list of those who attended the public inquiry is given in Appendix III.

4. In our last report (1958) we made two recommendations on matters other than protection. The recommendations and the action taken thereon are given below:

Implementation of Commission's recommendations in its last report

Recommendation 1

“Positive steps should be taken to encourage the indigenous manufacture of motors of ratings of 100 h.p. and above by requiring indentors of electric motors to estimate their requirements sufficiently in advance and plan their orders on domestic manufacturers. The Development Wing should before recommending the issue of a licence satisfy itself that the applicant had taken adequate measures to obtain these requirements from indigenous sources.”

The Development Wing has informed us that applications for imports are examined carefully and are recommended only when it is satisfied that deliveries quoted by indigenous manufacturers are inconveniently long even when indents are made sufficiently in advance of actual need. The producers on their part point out that long deliveries are caused by their inability to obtain raw materials in time particularly stampings which require extensive and expensive tooling for the bigger sizes of motors.

Recommendation 2

“The manufacturers of electric motors should publish the list prices of 1 to 15 h.p. motors in English and regional languages every half year, notifying every change in the list price and take positive steps to see that every dealer of their motors in the above categories displays the list prices at his premises in a conspicuous manner.”

The producers report that they are issuing price lists in English and regional languages once in six months or whenever there are changes in list prices.

5.1. The existing scheme of protection covers squirrel cage induction motors of brake-horse-power not exceeding 100 and not below $\frac{1}{4}$ and slip ring motors of brake-horse-power not exceeding 100 and not below 1 and excludes flame-proof motors and variable speed commutator motors. In connection with the present inquiry, we received suggestions for extending protection to motors above 100 h.p. from several quarters including the Development Wing. The Indian Electrical Manufacturers' Association has pleaded that orders for motors up to 1000 h.p. should be placed only with domestic producers.

5.2. This matter was discussed at length at the public inquiry. It was noted that since the last inquiry the industry has made significant progress in the production on the one hand of single phase and fractional h.p. motors and on the other hand of motors above 100 h.p. and achieved further diversification of its production. Some producers have actually executed orders for motors up to about 500 h.p. and many units in the industry are geared to take up the manufacture of motors of still higher horse power. There was a general desire that the scope of the inquiry should be enlarged. After taking into account all factors we have therefore decided that the inquiry should cover squirrel cage and slip-ring motors up to and including 500 h.p., inclusive of flame-proof motors. We have also decided to include single phase motors up to and including 3 h.p. and fractional h.p. motors within the scope of our inquiry.

संयोग ज्ञान

6.1. In 1958, there were 15 units in the large scale sector with a single shift capacity of 600,000 h.p. In 1960, the units in this sector have increased to 27 with a capacity of 1,136,040 h.p. on single shift. Figures of individual capacities are given in Appendix IV. An additional capacity of 821,900 h.p. has been sanctioned which includes establishment of 25 new units.

6.2. In the small scale sector, the Development Commissioner had reported 31 units with a capacity of 130,000 h.p. in 1958. According to the Development Commissioner, the number of units registered with him rose to 74 in 1959 with a capacity of 266,000 h.p. and employment of 2,890 persons. This information is based on a survey undertaken in 1959. Sankey Electrical Stampings Private Ltd. have however furnished a long list of buyers of stampings for electric motors. We suggest that the Development Commissioner in consultation with State Departments of Industries should verify the position.

6.3. The production of electric motors in recent years in the large scale sector as intimated by the Development Wing and in the small scale sector as intimated by the Development Commissioner is given below:

Year	Large Scale		Small Scale	
	No.	H.P.	No.	H.P.
1958	100,372	641,083	N.A.	51,533
1959	95,113	592,049	N.A.	70,064
1960 (Jan.-Oct.)	108,235	612,171	N.A.	Not available.

Details of output by the individual large scale manufacturers are given in Appendix V.

6.4. The proportions of different ranges of h.p. within the total production of motors in the large scale sector are stated below:

	1958	%	1959	%	1960 (Jan.-Oct.)	%
Upto 30	581,710	91	502,225	85	514,080	84
Above 30 to 50 H.P.	38,065	6	54,279	9	50,767	8
Above 50 to below 100 H.P.	18,193	3	28,060	5	37,549	6
100 H. P. and above	3,115	..	7,485	1	9,775	2
TOTAL	641,083	100	592,049	100	612,171	100

While the bulk of the production continues to be under 30 h.p. it is noticeable that production of motors of higher ratings shows an upward trend and manufacture of motors of progressively higher h.p. has been attempted. It is also noted that there was a fall in production in 1959 which has since recovered in 1960.

6.5. From our observation as well as the discussion which took place at the public inquiry, it is clear that the industry both in the large and in the small scale sectors has made substantial progress in the manufacture of fractional h.p. motors. However, we received complaints from small scale producers that their production and progress have recently suffered a setback on account of large imports from abroad. This subject is further discussed in paragraph 11.3.

6.6. Diversification.—At the time of the last inquiry in 1958, only Crompton Parkinson claimed to produce motors for cranes, multi-speed motors, special spinning frame motors, acid proof motors and motors of class B insulation. Since then these motors figure in the production of several other producers. Certain units in the industry have plans for the immediate future to embark on the manufacture of flame-proof and explosion-proof motors, multi-speed pole changing motors, variable speed commutator motors, synchronous motors, motors for sugar centrifuges and other special motors. This trend towards increased diversification is explained by the difficulties caused by the fall in demand for the common type of motors during the years 1958 to 1960, growing competition from the small scale sector and rising demand in the country for various kinds of motors to suit special requirements.

6.7. As stated above, the present installed capacity of 27 units is 1,136,040 h.p.. We are informed that sanction has been given to 6 of these units to expand their capacity by 460,000 h.p. Of the 25 new units, licences have been granted to 23 and approved in the case of 2 units with a total capacity of 361,900 h.p. When all these expansion schemes materialise the total capacity of the industry will rise to 1.96 million h.p. on single shift. The above figures of capacity do not include that of Heavy Electricals Ltd., Bhopal. The manufacturing programme of that unit includes A.C. industrial motors above 200 h.p. and up to 5500 h.p. with a production target of 460 units annually totalling 300,000 h.p. In addition it will also manufacture D.C. traction motors, D.C. industrial motors and flame proof motors for mining and oil industry. It is expected to commence manufacture of motors in the third quarter of 1963 and attain its production targets only by 1967-68.

7.1. In 1958, we estimated the domestic demand for electric motors **Domestic demand** for that year at 750,000 to 800,000 h.p. and expected it to rise from 800,000 to 1,000,000 h.p. in 1961.

7.2. In estimating the domestic demand for the year 1960 and the next three years, we took into account the estimates received from the Development Council for Heavy Electrical Industry, the Development Wing, the Indian Electrical Manufacturers' Association and some producers. For the year 1960, the total availability of motors, as indicated by production and imports for the January-October period, was running at the annual rate of one million h.p. As the general consensus of opinion at the public inquiry was that there was no evidence of unsatisfied demand or accumulation of stocks during those months, we concluded that the current domestic demand may be placed at one million h.p.

7.3. For future demand, it will be rational to estimate the requirements of electric motors in terms of horse power for industrial uses on the basis of generation of power as projected for the Third Five Year

Plan. The targets envisaged for additional generation of power in each year are given below:

Year	Million K.W.
1961-62	1·0
1962-63	1·0
1963-64	1·2
1964-65	1·3
1965-66	1·5

For estimating the requirements of motor horse power from these targets of power generation, the Development Council proceeded on the assumption that 50 per cent of the power generated in any year will be available for industries operating with motors and that the load-factor will be 40 per cent. On this basis, it arrived at the result that 1.66 million h.p. will be necessary for every one million k.w. of additional power generated. We have compared this factor 1.66 adopted by the Development Council with the ratio of availability of motor h.p. to additional electric power generated in each of the three years 1956-57 to 1958-59 and find that the factor has stood approximately at 1.86, 2.13 and 2.58 respectively. This disparity was discussed at length at the public inquiry. There was a general agreement that the factor adopted by the Development Council is an under-estimate and that it would be more realistic to adopt at least 2.0 as the required factor.

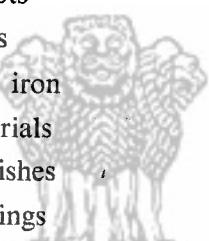
7.4. With 1.3 million k.w. as the approximate additional power to be generated in 1964, the above stated factor indicates motor h.p. requirements for that year at 2.6 million h.p. We have already pointed out above that with the expansion schemes sanctioned till now for the large scale sector the total single shift capacity contemplated for the industry for the near future is 2 million h.p. If it turns out as reported that the Third Five Year Plan target of installed capacity of 11.8 million k.w. is itself raised to 13.4 million k.w. our estimates of motor horse power requirements will have to be pitched correspondingly higher. The Development Wing has also drawn our attention to the additional requirements of motor horse power as part of machine tools and industrial machinery to be manufactured during the Third Plan which must add to our estimates.

7.5. The industry in both large scale and small scale sectors seems capable of meeting the requirements of the country if it works on double shift. Working double shift would firstly result in better utilization of machinery installed in the industry, thereby minimising imports of such machinery as has to be imported from outside and secondly bring in substantial economies in the costs of production. We, therefore, recommend that Government should give all possible assist-

ance to the industry for this purpose especially by ensuring adequate supply of raw materials. We also consider that steps should be taken for planned production of higher horse power motors and as far as possible avenues for utilising indigenous motors even with imported plant and machinery should be explored. A situation may however arise when either some of the licensed capacity is not fully established or the industry inspite of working double shift is not able to meet the country's requirements. Under such circumstances we suggest that Government should carefully watch the situation and license additional capacity if found necessary.

Raw Materials

8.1. The raw materials required by the industry are as under:

- 
 1. Electrical steel stampings
 2. (a) Synthetic enamel wires
(b) Copper strips and cast rings
(c) Aluminium ingots
 3. Steel rods and bars
 4. Foundry grade pig iron
 5. (a) Insulating materials
(b) Insulating varnishes
 6. Ball or roller bearings
 7. Paints and thinners
 8. Miscellaneous items such as bolts, nuts, terminal lugs, terminal boards, slip-ring assembly, brush holders, brushes, brazing alloy rods, etc.

We review below the present position of principal raw materials:

8.2.1. Electrical sheet steel and stampings.—The Tata Iron & Steel Co. Ltd. (TISCO) is the only producer of electrical sheet steel required for manufacture of stampings. Its present capacity for this steel is 18,000 metric tonnes and this is interchangeable with that for mild steel sheets. Its actual production for the years 1958 to 1960 has been 11,096, 12,335 and 15,077 tonnes respectively. The company has plans to expand its capacity to 24,000 tonnes by the end of 1961 and is negotiating with Government to raise it to 60,000 tonnes. We understand that there are plans to instal capacity for the manufacture of electrical steel sheets at the Rourkela Steel Plant. TISCO at present delivers its entire output to Sankey Electrical Stampings Private Ltd. who also act as stockists for supply to other customers without charging extra trading commission. TISCO has expressed its willingness to supply others direct if the indent is in wagonload and a proportion in off-grade steel is acceptable. Together with imported steel obtained by Sankeys, the supply position of steel for stampings at present appears satisfactory.

8.2.2. Till recently, Sankey Electrical Stampings Private Ltd. was, except for a small quantity manufactured for their own use by a few units, the only producer of stampings required by this industry. The present capacity of Sankeys on double shift is 4,600 tons and the company has plans for expansion to 6,000 tons by 1962 and 10,000 tons by 1964. Devidayal Stainless Steel Industries Private Ltd. with a sanctioned double shift capacity of 6,000 tons, of which 60 per cent i.e., 3,600 tons is expected to be available for the electric motor industry, is likely to commence production by the middle of 1961. Availability of electrical steel to the industry for the three years 1958 to 1960 (Jan.-Oct.) is given below :

(In metric tonnes)

Year	Sankey's supply of stampings	Sheets required for stampings in the preceding col.*	Sheets supplied by Sankeys	Total availability of sheet steel to electric motor industry-col. (3) plus (4)	Total availability of electric steel including fans, chokes, etc.
1	2	3	4	5	6
1958 . . .	3873	9700	2261	11961	15605
1959 . . .	2792	7000	2159	9159	13999
1960 (Jan.-Oct.) .	3128	7800	1342	9142	14197

On the basis of the average consumption during the last three years 15,000 tonnes of electrical steel sheets or 6,000 tonnes of stampings are required for every one million h.p. of electric motors produced. The requirements of stampings for electric motors by 1964, corresponding to a production of 2.6 million h.p., will amount to 15,600 tonnes and that of steel to 39,000 tonnes. We have also observed that about 50 per cent additional sheets/stampings are at present required for electric fans, chokes, etc. and that the manufacturing capacity for such stampings cannot be distinguished from that for electric motors. Assuming that the ratio of consumption of stampings/sheets between electric motors and other uses remains the same during the next three years the total requirements of stampings during 1964 will be 23,400 tonnes and that of steel to manufacture these stampings 58,500 tonnes.

8.2.3. In the light of these rapidly increasing requirements, the position of sheet steel and stampings for the future would appear to be not free from difficulties. For sheet steel, the capacity of TISCO with the expansion already planned will be 24,000 tonnes as against the demand

*On the basis that for every tonne of stampings 2.5 tonnes of sheet steel is required. [The share of the small-scale sector was 16.1 per cent in 1958, 17.3 per cent in 1959 and 21.6 per cent in 1960 (Jan.-Oct.)].

of 58,000 tonnes. It is clear that the deficit will have to be covered either from imports or from the projected plant at Rourkela and/or the expansion schemes of TISCO. The foreign exchange implications of any such expensive imports of raw materials hardly need to be stressed. The demand for stampings in 1964 will exceed 23,000 tonnes. The existing capacities, on double shift, of Sankeys (4670 tonnes), Devidayal (3660 tonnes) and those few units which manufacture for self consumption are far from adequate to meet the future requirements of the industry. As we have observed elsewhere, any upward revision of our power targets will make the situation more acute. We, therefore, recommend that steps to establish additional capacity for the manufacture of stampings should be expedited.

8.2.4. The subject of standardisation of designs of stampings was discussed at length at the last public inquiry and there is some change in the situation. Sankeys offer a certain price inducement in the form of a standardisation rebate in favour of those who are prepared to avail themselves of standardised designs and it is reported that the small scale sector has generally adopted these stampings.

8.2.5. The industry reports that the quality of Sankey's stampings is satisfactory. As for prices, some reduction was made in January 1959 inspite of increased prices of domestic and imported steel and a further reduction has been reported since February, 1961. Sankeys had also raised the bulk rebate to its customers in January 1959.

8.3. *Copper enamel wire*.—There are now eight units in the field manufacturing copper enamel wire and the position on the whole has further improved since the last inquiry.

8.4. *Copper strips, cast rings and aluminium ingots for rotor casting*.—Copper strips and cast rings are used for fabrication of rotors for squirrel cage induction motors and are processed indigenously from imported electrolytic copper. In the case of cast rotors indigenous aluminium is used. With five-fold increase in production of aluminium envisaged during the Third Plan period, its availability is expected to improve considerably. Besides this important consideration of indigenous availability of raw material, aluminium cast rotors have also the advantage of reducing the manufacturing cost. It is mainly on the latter consideration, we understand, that producers abroad have been generally making use of aluminium cast rotors for squirrel cage induction motors upto medium sizes which constitute the bulk of indigenous production. Although most producers in this country realise the desirability of adopting the improved practice of using die cast or centrifugal cast aluminium rotors they still adhere to the old practice of fabricating rotors from copper. The former technique requires some extra capital investment which will more than repay itself in economies of production. We recommend that Government should encourage the producers to use aluminium cast rotors and for this purpose assist the industry to procure the necessary equipment for switching over as early as possible to aluminium die cast or centrifugal cast rotors.

8.5. Insulating materials.—Insulating materials for slot and intercoil insulation are mostly imported although increasing quantities are available from indigenous sources. Further, capacity for the manufacture of paper based insulating material such as presspan is being established in the country. Impregnating varnishes suitable for 'E' and higher class insulation are already available from indigenous sources.

8.6. Ball and roller bearings.—The complaints about the supply and quality of this vital component have not yet ceased. We have in our report on Ball Bearings Industry (1960) drawn attention to the important need for indigenous manufacturers improving quality and expediting supplies.

8.7. The position regarding other raw materials and consumable stores continues to be generally satisfactory.

8.8. Raw material cost ranges between about 70 to 80 per cent of the ex-works cost of a motor. Of the raw materials used, the indigenous content is generally over 90 per cent.

8.9. It was brought out at the public inquiry that for some years now U.S.A., West Germany, U.K. and other advanced countries have switched over to class 'E' insulation as against class 'A' insulation and that this has resulted in economies in materials and reduction in costs. No such change has, however, been introduced in this country even by producers who have foreign technical collaboration. Amongst the reasons advanced by the producers for the delay in switching over to class 'E' insulation were reluctance of consumers to accept motors with this class of insulation which admits of higher temperature rise, non-availability and higher prices of suitable slot and intercoil insulating material, non-inclusion by the I.S.I. of class 'E' insulation in its present specifications with the corresponding absence of standard frame sizes and lack of their experience in the use of class 'E' insulation. These points were discussed at great length during the public inquiry. It was agreed that economies in raw material in the use of class 'E' insulation are substantial and would result in appreciable reduction in costs. We have no doubt that the consumers' resistance could be overcome if the advantage of lower price of electric motors with class 'E' insulation were passed on to the consumers and concrete steps were taken to familiarize them with regard to motors with this class of insulation. As the industry is in any case importing most of its requirements of slot and intercoil insulating material at present, the lack of indigenous availability of such insulating material should not stand in the way of changing over to class 'E' insulation and the incidence of its higher cost would be negligible. Further, with the progressive use of class 'E' insulation it will be natural to assume that the class of material available and to be developed in the country would also be suitable for this class of insulation. As it is, the producers in many cases have not adopted frame sizes at present specified by I.S.I. Besides, we also understand that the I.S.I. is shortly bringing out a revised specification including class 'E' insulation. Lastly, the plea of lack of experience for switching over to

class 'E' insulation would not hold good at least in case of producers who have foreign collaboration. We have carefully gone through the various aspects of the matter and have come to the conclusion that the delay on the part of the producers to adopt progressive designs and techniques is more due to their lack of initiative resulting from a sheltered domestic market enjoyed by them rather than to any of the above considerations. This is a serious matter both in view of the higher prices that the consumers have to pay for indigenous motors and the inability of the industry to enter the export market for earning the much needed foreign exchange. We, therefore, recommend that the producers of electric motors should expedite measures to switch over to class 'E' insulation without further delay.

8.10. In the course of the inquiry, representatives of the small scale sector complained of difficulties about the supply and prices of raw materials. It is clear from the rising trend of the share of the small scale sector in the available supplies of stampings that this sector has an expanding role in the electric motor industry. In view of the fact that this industry is particularly well suited for small scale enterprise, we recommend that the Development Commissioner in consultation with the Directors of Industries in the States should take necessary steps to improve the present arrangements of distributing raw materials to the small units.

9.1. The quality of the domestic product continues to be satisfactory. The Development Wing reports that it has not received any complaint on the ground of quality. The Director

Quality of the domestic product General of Supplies and Disposals and Hindustan Aircraft (Pvt) Ltd. have also testified to the acceptable quality of indigenous motors. The

Bombay Millowners' Association states that the majority of its members is satisfied with the quality and that whatever defects were pointed out by the members were attended to promptly. The defects complained of were bad quality of bearings, poor balancing of rotating parts, etc. The Hindustan Machine Tools Ltd. has expressed the view that the indigenous motors are suitable for general purposes but excessive vibration renders them unsuitable for precision machine tools. The alleged defects were brought to the notice of the manufacturers who have taken measures to rectify these defects.

9.2. The Indian Standards Institution has already published three standard specifications for electric motors IS:325—1959 for three phase induction motors; IS:996—1959 for small A.C. and universal electric motors with class 'A' insulation and IS:1231—1958 for dimensions of three phase induction motors. Among other work undertaken to extend the scope of existing specifications, the Institution is working on inclusion of motors of higher output under IS: 325 and motors of class 'E' insulation under IS: 1231.

9.3. Five large scale and four small scale units have obtained licences for the use of the I. S. I. Certification Mark relating to IS:325. In view of the reluctance of manufacturers to adopt the I. S. I. Certification

Mark on the ground of high marking fees, the Institution has recently announced a revised schedule of marking fees on a slab system and it is hoped that the other producers will now adopt the Certification Mark.

10.1. Protected categories of electric motors and component parts thereof excluding control gear are assessed to Existing rates of duty duty under Item No. 72 (14) of the First Schedule to the Indian Tariff Act, 1934. The relevant extract from the Schedule is given below:—

Item No.	Name of article	Nature of duty	Standard rate of duty	Preferential rate of duty if the article is the produce or manufacture of				Duration of protective rates of duty
				The U.K.	A	British	Burma colony	
1	2	3	4	5	6	7	8	
72(14)	(a) The following electric motors, namely, squirrel cage induction motors of a brake-horse-power not exceeding 100 but not less than one quarter of one brake-horse-power and slip ring motors of a brake-horse-power not exceeding 100 but not less than one brake-horse-power; excluding flame proof motors and variable speed commutator motors.	Protective	15 per cent <i>ad valorem</i>	..	..	Free	December 31st, 1961	
	(b) Component parts of electric motors as defined in item 72(14)(a), but excluding control gear for the same, provided that only such articles shall be deemed to be component parts as are essential for the working of the electric motors and have been given for that purpose some special shape or quality which would not be essential for their use for any other purpose.	Protective	20 per cent <i>ad valorem</i>	..	..	..	December 31st, 1961.	

NOTE.—In addition to the above rates of protective duty, a countervailing import duty equivalent to the excise duty leviable on like articles produced or manufactured in India is levied on imported motors under the provisions of I. C. T. Item No. 73(21).

10.2 The rates of excise duty leviable on electric motors and parts thereof under the Central Excises and Salt Act, 1944 are given in Appendix VI.

10.3. At the public inquiry we received a complaint that because of tariff valuation, the excise duty leviable on electric motors operates unevenly on the small scale sector *vis-a-vis* the large scale sector and though costs may be lower for the former, the incidence of duty is apt to be heavier. We suggest that the small scale sector should approach the relevant authorities in this matter.

11.1. The following table gives the quantity and value of imports **Imports and import control policy** of electric motors during 1958, 1959 and 1960 (January-October) as recorded in the 'Monthly Statistics of Foreign Trade of India' :—

Country of origin	1958		1959		1960 (Jan.-Oct.)	
	No.	Value (Lakh Rs.)	No.	Value (Lakh Rs.)	No.	Value (Lakh Rs.)
1	2	3	4	5	6	7
U.K.	17,323	141.8	12,517	93.2	14,219	94.2
W. Germany	4,187	52.8	5,852	84.3	1,853	52.2
U.S.A.	479	103.0	552	17.7	1,113	20.1
Others	11,361	54.5	3,082	59.1	8,759	51.3
TOTAL	33,350	352.1	22,003	254.3	25,944	217.8

The above figures are inclusive of the imports of fractional horse-power motors. The following table gives the quantity and value of imports of fractional h.p. motors during 1959 and 1960 (January-October).

	1959		1960 (Jan.-Oct.)	
	Qty. (Nos.)	Value (Lakh Rs.)	Qty. (Nos.)	Value (Lakh Rs.)
1	2	3	4	5
A.C. Single Phase fractional horse-power motors upto quarter H.P.	3,516	3.01	6,482	5.92
A. C. Single Phase fractional horse-power motors above quarter H. P.	6,189	8.88	7,420	10.87
D. C. fractional horse-power motors . . .	1,286	1.79	1,712	1.97
TOTAL . . .	10,991	13.68	15,614	18.76

The published accounts do not record the imports of electric motors by horse power, but the Commission receives monthly statements of imports of protected commodities from the Director General of Commercial Intelligence and Statistics, which include with effect from 1st January 1959 imports of electric motors by number as well as by horse power. According to him, the imports totalled 138,695 h.p. during 1959 and 131,268 h.p. during 1960 (January-October).

11.2. Electric motors and parts thereof fall under Serial Nos. 32(a), (b), (c), (d) and (e) of Part II of the Import Trade Control Schedule. A summary of the import control policy for the various licensing periods since October 1958—March 1959 as given in Appendix VII. It will be seen that imports of squirrel cage three phase motors are totally banned except as parts of machinery and equipment under certain conditions. Actual users' applications are considered *ad hoc* for import of flame proof motors conforming to BSS: 741 of 1937. The imports of other types of motors, including fractional horse power motors, are restricted. In this connection we would suggest that as there is great scope for absorption of indigenous motors with the growth of machine tool and machinery manufacturing industries, great care should be exercised to encourage use of indigenous motors and also to consider the possibilities of deleting this item wherever possible for imported plant and machinery.

11.3. We however received complaints from the small scale sector that large imports of fractional horse power motors have taken place through the State Trading Corporation, over and above the established importers' quota, to the detriment of the small producer. It was not possible for us to verify certain estimates, submitted in the course of

the public inquiry, of market demand and capacity of the small scale units to produce these motors. The figures given earlier show a marked increase in imports of fractional horse power motors during 1960. We recommend that Government should carefully assess the demand and production capacity of the industry in both sectors before issuing import licences for such motors.

12. Exports of electric motors in the past have been negligible. In a previous paragraph, we have laid great stress on the vital need for

Exports this industry to keep pace with technical progress already achieved in other countries with special reference to the adoption of class 'E' insulation. We are satisfied that with proper efforts on the part of the industry to adopt modern techniques and appropriate export incentives, the industry should be able to lower its costs of production and establish an export market. In this connection, the example set by other light engineering industries such as sewing machines and electric fans should be a pointer.



13.1. We selected three units for purposes of determining the costs of production of indigenous electric motors and our Cost Accounts

Commission's estimates of costs of production and fair ex-works prices

Officers visited these units and examined their costs. After they submitted their reports we decided not to adopt the costs of one of the three units for assessing the disadvantages suffered by the indigenous electric motor industry vis-a-vis imported motors. Firstly, the volume of production of electric motors at that factory is rather small and secondly, its main activity is not the manufacture of electric motors but transformers. Based on the findings of actual costs of production for the year 1959-60 at the other two units we framed estimates of their costs for the next three years and later discussed them with the representatives of the two companies concerned. As the companies desired that details of their costs of production and those of our estimates should be kept confidential we are forwarding to Government the reports of our Cost Accounts Officers as confidential enclosures to this report.

13.2. In arriving at the estimates for future we have assumed that the pattern of production at the units would be broadly the same as in 1959-60. Depreciation has been provided at normal income-tax rates. We have allowed a return of 10 per cent on capital employed, the working capital element of which has been computed at an amount equivalent to four months' cost of production excluding depreciation. The following two statements give a summary of our estimates of fair ex-works prices for the future of electric motors of certain types and horse power manufactured by the two units [A and B.]

STATEMENT I

Estimates of fair exworks prices of motors manufactured by unit A

(In Rs. per motor)

Type	Totally enclosed fan cooled (Squirrel cage)						Screen Protected (Squirrel cage)	Drip Proof	Proof cage)
H.P.	1	2	3	5	60	7·5	10	15	
No. of poles	4	4	2	4	4	4	4	4	
1	2	3	4	5	6	7	8	9	10
1. Raw materials	109·53	140·15	134·85	182·57	230·65	1736·53	289·79	311·07	443·69
2. Conversion charges	18·90	19·41	19·41	36·29	26·66	158·27	26·18	30·24	54·02
3. Painting and packing cost	7·65	7·65	7·65	8·79	8·79	81·00	12·57	12·57	18·11
4. Royalty	6·14	7·10	8·69	8·27	10·48	98·62	12·91	15·87	20·72
5. Depreciation	2·63	2·69	2·69	5·04	3·70	95·93	3·64	4·20	8·56
6. Return	7·94	9·06	8·94	13·78	13·90	194·44	16·38	18·01	28·10
7. Fair ex-works price*	152·79	186·06	182·23	254·74	294·18	2364·79	361·47	391·96	573·20
Say (Rs.)	153	186	182	255	294	2365	361	392	573

*Excluding excise duty.

Type	Screen Protected Drip Proof (Squirrel cage)				Screen protected (Slip ring)				Totally Enclosed (Slip ring)				Hollow Spindle Loom Motor				(In Rs. per motor)			
H.P.	20	20	30	50	50	100	50	50	50	50	50	50	5	30	1					
No. of poles	4.	6	4	4	4	4	4	6	6	6	4	4	4	4	6					
1	11	12	13	14	15	16	17	18	19	20										
1. Raw materials	.	.	643.81	719.56	665.44	927.29	1186.05	2151.32	2208.51	321.36	1026.34	174.37								
2. Conversion charges	.	.	70.54	77.88	75.29	120.42	179.06	405.96	200.76	121.55	178.25	31.52								
3. Painting and packing cost	.	46.13	46.13	46.13	69.33	69.33	81.00	81.00	81.00	15.18	47.41	7.65								
4. Royalty	.	.	27.82	32.52	33.09	50.75	71.76	127.21	166.74	18.32	56.99	9.31								
5. Depreciation	.	.	11.18	12.33	11.93	19.08	28.37	246.84	122.06	19.26	108.38	4.38								
6. Return	.	.	39.83	44.42	42.20	62.54	83.30	404.18	248.69	36.80	183.19	12.70								
7. Fair ex-works price*	.	.	839.31	932.84	874.08	1249.41	1617.87	3416.51	3027.76	532.47	1600.56	239.93								
Say (Rs.)	839	933	874	1249	1618	3417	3028	532	1601	240										

*Excluding excise duty.

STATEMENT II

Estimates of fair ex-works prices of motors manufactured by unit B

(In Rs. per motor)

H.P.	Type	Fractional H.P. motors, Split phase Capacitor Start				Totally Enclosed Fan Cooled (Squirrel cage)					
		0.25	0.50	0.25	0.50	2	3	5	7.5	10	15
No. of poles		4	4	4	4	4	4	4	4	4	4
1	2	3	4	5	6	7	8	9	10	11	
1. Raw materials		63.35	77.17	73.55	88.68	164.61	212.90	264.60	366.64	500.40	763.53
2. Conversion charges		28.42	29.47	28.42	29.47	50.23	69.26	78.62	71.45	86.73	153.50
3. Packing materials		1.99	1.99	1.99	1.99	7.80	9.22	10.53	12.93	19.64	54.05
4. Royalty . . . . .		..	..	..	..	16.69	19.24	24.98	31.97	39.33	54.95
5. Depreciation		1.08	1.12	1.08	1.12	5.07	6.99	7.94	7.21	8.76	15.50
6. Return		6.90	7.53	7.24	7.92	11.43	15.10	18.01	21.00	27.49	44.73
7. Fair ex-works price *		101.74	117.28	112.28	129.18	255.83	332.71	404.68	511.20	682.35	1086.26
Say (Rs.)		102	117	112	129	256	333	405	511	682	1086

*Excluding excise duty.

(In Rs. per motor)

Type

Screen protected (Squirrel cage)

H.P. 1 2 3 3 5 5 7.5

No. of poles 4 4 2 4 4 6 2 4

1 12 13 14 15 16 17 18 19

1. Raw materials	118.89	124.22	140.26	191.73	217.98	323.34	293.02	304.63
2. Conversion charges	38.07	45.86	50.55	61.77	62.40	61.16	89.86	66.77
3. Packing materials	7.91	10.53	10.53	8.12	8.59	9.45	9.84	9.84
4. Royalty	12.21	14.39	17.24	16.50	21.20	26.42	27.68	25.86
5. Depreciation	3.84	4.63	5.10	6.24	6.30	6.17	9.07	6.74
6. Return	8.06	9.65	10.76	13.51	14.62	18.20	20.17	18.15
7. Fair ex-works price*	188.98	209.28	234.44	297.87	331.09	444.74	449.64	431.99
Say (Rs.)	189	209	234	298	331	445	450	432

*Excluding excise duty.

STATEMENT II—*contd.*

(In Rs. per motor)

Type	H.P.	Screen protected (Squirrel cage)						Loom motors		
		10	10	15	15	20	20	1	1	
No. of poles		4	6	4	6	4	8	6		
1		20	21	22	23	24	25	26		
1. Raw materials	.	374.17	423.11	450.30	717.50	631.14	182.45	182.45		
2. Conversion charges	.	70.82	70.82	73.64	132.28	159.74	75.50	79.88		
3. Packing materials	.	12.06	12.29	12.29	54.05	54.05	13.13	13.13		
4. Royalty	.	31.60	38.78	41.33	49.21	56.83	25.53	20.17		
5. Depreciation	.	7.15	7.15	7.43	13.36	16.13	7.62	8.06		
6. Return	.	21.15	23.03	24.30	40.81	41.02	15.07	15.33		
7. Fair ex-works price*	.	516.95	575.18	609.29	1007.21	958.91	319.30	319.02		
Say (Rs.)	.	517	575	609	1007	959	319	319		

*Excluding excise duty.

14.1. We called for information from the Collectors of Customs and some of the importers regarding c.i.f. prices and landed costs of recently imported electric motors. Due to restrictions on imports of electric motors relevant information could not be obtained. The Collector of Customs, Bombay however furnished us

Comparison of the estimated fair ex-works prices of indigenous electric motors with the landed costs without duty of imported motors

with certain information relating to motors imported through his port in 1960, but this was

mostly related either to special types of motors not being manufactured in the country or to motors with special accessories or to those horse power motors for which we did not estimate the future costs of production. We, therefore, requested importers and manufacturers with foreign collaboration to send us f.o.b./c.i.f. quotations of motors of their principals abroad. Here again, except in the case of one importer, namely, Balmer Lawrie and Co. Ltd., the information furnished related to motors mainly with class 'E' insulation which are at present not manufactured in the country. We have, therefore, adopted for purposes of comparison with our estimated fair ex-works prices of indigenous motors the c.i.f. quotations received through Balmer Lawrie & Co. Ltd., for motors with class 'A' insulation. Although the above c.i.f. quotations were not available for all the types and ratings for which we have estimated the fair ex-works prices, the information covered a fairly large number of items.

14.2. The following statement gives a comparison of the fair ex-works prices of indigenous electric motors of certain types and ratings with landed costs without duty of similar types and ratings of imported motors.

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Statement showing comparison of the estimated fair ex-works prices of indigenous motors with the landed cost (without duty) of imported motors

(In Rs. per motor)

Types	H.P.	Screen protected (Squirrel cage)					Screen protected Drip Proof (Squirrel cage)				
		3	5	7.5	10	15	20	7.5	10	15	20
Poles	4	4	4	4	4	4	4	4	4	4	4
1	2	3	4	5	6	7	8	9	10	11	12
1. C. i.f. price	250	294	390	472	605	680	400	484	620	695	1680
2. Customs duty * (15 per cent)	38	44	59	71	91	102	60	73	93	104	252
3. Clearing charges (1 %)	3	3	4	5	6	7	4	5	6	7	17
4. Landed cost with duty (1+2 +3)	291	341	453	548	702	789	464	562	719	806	1949
5. Landed cost without duty	253	297	394	477	611	687	404	489	626	702	1697
6. Estimated fair ex-works price †	298	331	432	517	609	959	361	392	573	839	1249
7. Difference between 6 & 5	45	34	38	40	-2	272	(-43	(-97	(-53	137	(-448
8. Difference (7) as % of c. i. f. (1)	18.0	11.6	9.7	8.5	(-0.3	40.0	(-10.8	(-20.0	(-8.5	19.7	(-26.7

*Excluding the countervailing import duty equivalent to the excise duty.

†Excluding the excise duty.

(In' Rupees per motor)

Types	Totally enclosed fan cooled (Squirrel cage)					Totally enclosed (Slip ring)	Fractional Mo-		Fractional Mo-	
	H.P.	3	5	7.5	10		50	0.25	0.50	
Poles	•	4	4	4	4	4	6	4	4	4
1	13	14	15	16	17	18	19	20	21	22
1. C. i. f. price	•	253	330	453	580	755	6000	93	112	108
2. Customs duty* (15 per cent)	•	38	50	68	87	113	900	14	17	16
3. Clearing charges (1%)	•	3	3	5	6	8	60	1	1	1
4. Landed cost with duty (1+ 2+3)	•	294	383	526	673	876	6960	108	130	125
5. Landed cost without duty	•	256	333	458	586	763	6060	94	113	109
6. Estimated fair ex-works price †	•	255	291	511	682	1086	3028	102	117	112
7. Difference between 6 & 5	(→)1 77	(→)39 72	53	96	323	(→)3032	8	4	3	..
8. Difference (7) as % of c.i.f.(1)	(→)0.4 30.4	(→)11.80 21.8	11.7	16.55	42.8	(→)50.5	8.6	3.6	2.8	..

*Excluding the countervailing import duty equivalent to the excise duty.

†Excluding the excise duty.

15.1. The above comparison of our estimated fair ex-works prices of indigenous motors with the landed costs without duty of corresponding imported motors indicates that (i) in the case

Continuance of protection

of motors of squirrel cage drip proof types the fair ex-works prices are lower than the landed costs without duty and only in one case there is

disadvantage of 19.7 per cent ; (ii) in the case of motors of totally enclosed fan cooled types the disadvantage of the domestic industry ranges from 11.7 per cent to 42.8 per cent ; (iii) in the case of motors of squirrel cage screen protected types the disadvantage ranges from 8.5 per cent to 40 per cent and (iv) in the case of fractional h.p. motors the disadvantage ranges from 2.8 per cent to 8.6 per cent. This may perhaps lead to the conclusion that the disadvantage suffered by the electric motor industry *vis-a-vis* imported motors is, except in a few cases, only nominal and as such it may not need continuance of tariff protection. As stated by us earlier in paragraphs 6.4 and 6.6 the industry recently emerged from a slack period in 1959 and early 1960 when the demand and consequently the production had fallen. It is just now embarking on large scale expansion and diversification and is attempting to take up the manufacture of motors of progressively higher ratings and special types which were not manufactured in the past. Such an enterprise needs every encouragement and the continuance of a sense of security at present enjoyed by the industry under protection is necessary for the purpose. While the comparison with c.i.f. prices has been attempted only in the case of low horse power motors for which we have estimated fair ex-works prices, it is not improbable that the domestic industry will be at a greater disadvantage in the case of higher horse power motors. We are of the view that protection should be continued for a further term to enable the industry to consolidate its present position and to successfully carry out its plans for the future. A review of this industry can be undertaken by us in 1963 along with that of the power and distribution transformer industry, protection granted to which would expire on 31st December 1963. We, therefore, recommend that protection to the electric motor industry should be continued for a further period of two years ending 31st December 1963 and that the scheme of protection should cover (i) squirrel cage and slip ring motors of 1 to 500 h.p. excluding variable speed commutator motors, (ii) single phase motors of 1 to 3 h.p., (iii) fractional h.p. motors and (iv) component parts of the above mentioned motors.

15.2. As regards the rate of protective duty, the existing rate of duty on squirrel cage induction motors of $\frac{1}{4}$ to 100 h.p. and slip ring motors of 1 to 100 h.p. [I.C.T. Item 72(14)(a)] is 15 per cent *ad valorem*. The revenue duty on non-protected categories of motors [I.C.T. Item No. 72] has already been raised from 10 per cent *ad valorem* to 15 per cent *ad valorem* by the Finance Bill, 1961. We recommend that the same rate of duty, *namely*, 15 per cent *ad valorem*, should be made applicable to squirrel cage and slip ring motors of 1 to 500 h.p., single phase motors of 1 to 3 h.p. and fractional h.p. motors of not

less than $\frac{1}{4}$ h.p. As regards the component parts of the above motors we recommend that the existing duty of 20 per cent *ad valorem* should be continued. Fractional h.p. motors less than $\frac{1}{4}$ h.p. are at present assessed to a revenue duty of 35 per cent *ad valorem* under I.C.T. Item 72(6). These sizes of fractional horse power motors are mostly manufactured by the units in the small scale sector for which we have not estimated the fair ex-works prices. Further, the small scale sector, with its low level of production and other drawbacks as compared to the large-scale sector should need a higher rate of protective duty than that enjoyed by the latter. We, therefore, recommend that the existing revenue duty of 35 per cent *ad valorem* on fractional h.p. motors of less than $\frac{1}{4}$ h.p. and on component parts of such motors should be converted into an equivalent protective duty.

16. If our recommendations in paragraph 15 are accepted, Item No. 72(14) of the First Schedule to the Indian Customs Tariff Act, 1934 should be amended as indicated below :—

Item No.	Name of article	Nature of duty	Standard rate of duty	Preferential rate if the article is the produce or manufacture of		Duration of protective rates of duty	
				The U. K.	A. British Colony		
1	2	3	4	5	6	7	8
72(14) (a) The following electric motors, namely:—							
(i)	Squirrel cage induction motors and slip ring motors of a brake-horse-power not exceeding 500 but not less than one brake-horse-power, excluding variable speed commutator motors.	Protective	15 per cent <i>ad valorem</i>	..	..	Free	December 31st, 1963.
(ii)	Single phase motors of a brake-horse-power not exceeding 3 but not less than one brake-horse-power.	Protective	15 per cent <i>ad valorem</i>	..	..	Free	December 31st, 1963.
(iii)	Fractional h.p. motors of not less than one-quarter of one brake-horse-power.	Protective	15 per cent <i>ad valorem</i>	..	..	Free	December 31st, 1963.
(iv)	Fractional h.p. motors of less than one-quarter of one brake-horse-power.	Protective	35 per cent <i>ad valorem</i>	..	..	10 per cent <i>ad valorem</i>	December 31st, 1963.

1	2	3	4	5	6	7	8
(b) Component parts of electric motors as defined in sub-items (i), (ii) and (iii) of Item 72(14)(a), but excluding control gear for the same, provided that only such articles shall be deemed to be component parts as are essential for the working of the electric motors and have been given for that purpose some special shape or quality which would not be essential for their use for any other purpose.	Protective	20 per cent <i>ad valorem</i>	..	..	..	December 31st, 1963.	
(c) Component parts of electric motors as defined in sub-item (iv) of Item 72(14) (a).	Protective	35 per cent <i>ad valorem</i>	..	..	10 per cent <i>ad valorem</i>	December 31st, 1963.	

17.1. We received no complaints about selling arrangements. Delivery periods of motors upto medium size were regarded as reasonable. As regards motors of higher horse power, the delivery periods quoted continue to be impractically long for causes already noted in paragraph 4. We recommend that Government should take steps to enable the industry to shorten its delivery periods by allowing imports of necessary raw materials or otherwise.

Selling arrangements and selling prices 17.2. There was considerable discussion on the selling prices of the large scale sector at the public inquiry. From the facts before us, the net selling prices of several producers appear to be unduly high. We have impressed on the producers the need to make a concerted effort to bring down their selling prices in fair relation to their costs particularly in view of the vital significance of electric motors to industrial development.

18. Our conclusions and recommendations are summarised as
Summary of conclusions and recommendations under:—

- (i) The current domestic demand for electric motors is placed at one million h.p.

[Paragraph 7.2.]

- (ii) The demand for electric motors in 1964 is estimated at 2.6 million h.p. If the Third Five Year Plan target for installed capacity of power is raised to more than 11.8 million K.W., the requirements of motors will be correspondingly higher.
[Paragraph 7.4.]
- (iii) Government should give all possible assistance to the electric motor industry to work double shift especially by ensuring adequate supply of raw materials.
[Paragraph 7.5.]
- (iv) Steps to establish additional capacity for the manufacture of stampings should be expedited.
[Paragraph. 8.2.3.]
- (v) Government should encourage the manufacturers of electric motors to use aluminium cast rotors and for this purpose assist the industry to procure the necessary equipment for an early switch-over.
[Paragraph 8.4.]
- (vi) Manufacturers of electric motors should expedite measures to change over to class 'E' insulation without further delay.
[Paragraph 8.9.]
- (vii) The Development Commissioner for Small Scale Industries, in consultation with the Directors of Industries in the States, should take necessary steps to improve the present arrangements of distributing raw materials to the small scale units in the electric motor industry.
[Paragraph 8.10.]
- (viii) Government should carefully assess the demand for fractional h.p. motors and production capacity of the electric motor industry in both sectors for manufacture of such motors before issuing import licences.
[Paragraph 11.3.]
- (ix) Protection to the electric motor industry should be continued for a further period of two years ending 31st December, 1963. Protection should cover (i) squirrel cage and slip ring motors of 1 to 500 h.p., excluding variable speed commutator motors, (ii) single phase motors of 1 to 3 h.p., (iii) fractional h.p. motors and (iv) component parts of the above mentioned motors.
[Paragraph 15.1.]
- (x) The protective duty applicable to squirrel cage and slip ring motors of 1 to 500 h.p., single phase motors of 1 to 3 h.p. and fractional h.p. motors of not less than $\frac{1}{4}$ h.p. should be 15 per cent *ad valorem*. The existing duty of 20 per cent *ad valorem* on component parts of the above motors should be continued. The existing revenue duty of 35 per cent *ad valorem* on fractional h.p. motors of less than $\frac{1}{4}$ h.p. and component parts of such motors should be converted into an equivalent protective duty.
[Paragraph 15.2.]

- (xi) If the recommendations to continue protection to the electric motor industry are accepted, Item 72(14) of the First Schedule to the Indian Tariff Act, 1934 should be amended as indicated in paragraph 16.

[Paragraph 16.]

- (xii) Government should take steps to enable the electric motor industry to shorten its delivery periods by allowing imports of necessary raw materials or otherwise.

[Paragraph 17.1.]

19. We wish to convey our thanks to the manufacturers, importers, consumers and the Associations who furnished us with detailed information in connection with this inquiry and
Acknowledgements to their representatives who gave evidence before us at the public inquiry.

K. R. P. AIYANGAR,
Chairman.

RAMA VARMA,
Secretary.

BOMBAY :

Dated 24th April, 1961.

S. K. MURANJAN,
Member.

J. N. DUTTA,
Member.



APPENDIX I

(Vide Paragraph 3.1)

*List of Firms/Associations/Government Departments to whom
questionnaires/letters were issued and from whom replies
or memoranda were received*

*Indicates those who have replied.

† Indicates those who have stated that they are not interested.

PRODUCERS

1. Argus Engineering Co. Ltd., Peelamedu Post, Coimbatore.
- *2. Associated Electrical Industries Manufacturing Co. Private Ltd., Crown House, 6, Mission Row, Calcutta-1.
- *3. Bharat Bijlee Ltd., Udyog Nagar, Bombay-22.
- *4. British India Electric Construction Co. Ltd., 6, Mayurbhanj Road, Calcutta-23.
- *5. Crompton Parkinson (Works) Private Ltd., Haines Road, Worli, Bombay-18.
- *6. Eastern Electrical Co. Ltd., Singanallur P.O., Coimbatore District.
- *7. Electric Construction & Equipment Co. Ltd., 9, Kaliprasanna Singhee Road, Calcutta-2.
- *8. The General Electric Company of India (Manufacturing) Private Ltd, 58, Taratala Road, Garden Reach, Calcutta-24.
- *9. The Hindustan Electric Co. Ltd., Industrial Area, Faridabad (East Punjab).
- *10. Jyoti Ltd., Baroda-3.
- *11. Kirloskar Electric Co. Ltd., Post Box No. 1017, Bangalore-3.
12. National Electrical Industries Ltd., Industrial Estate, Lalbaug, Bombay-12.
- *13. P. S. G. & Sons' Charity Industrial Institute, Peelamedu Post, Coimbatore.
14. Motor & Machinery Manufacturers Ltd., 31, Chittaranjan Avenue, Calcutta-12.
- *15. Orient General Industries Ltd., 8, Royal Exchange Place, Calcutta-1.
- *16. P. Govindaraj & Sons (Private) Ltd., 330, Thambu Chetty Street, Madras-1.
17. Coimbatore Premier Corporation Private Ltd., Post Box No. 210, 34, Avanashi Road, Coimbatore-1.
- *18. Sri Ramakrishna Mission Vidyalaya Industrial Section, Sri Ramkrishna Vidyalaya P.O., Perianaickenspalayam, R.S., Coimbatore District.
19. Sri Jayachandar Engineering Works, 9/431, Mettupalayam, R. S. Puram, Coimbatore.
20. The India Electric Works Ltd., Diamond Harbour Road, Behala, Calcutta-34.
- *21. Ogale Glass Works Ltd., Ogalevadi, District North Satara.
- *22. Alpha Electrical and Engineering Co., 30, Calicut Street, Fort, Bombay-1.
23. British India Engineering Co., Agra Road, Bhandup, Bombay-78.

- *24. Spartan Electricals, Cadell Road, Bombay.
- 25. Commercial Broadcasting, National Insurance Building, Bastion Road, Bombay-1.
- * 26. Hind Electrics, Opp. Mazgaon P.O., Bombay-10.
- 27. N. G. K. Electrical Industries, Devidayal Compound, Reay Road, Bombay-10.
- *28. Prabhat Electric Equipment Corporation, Jogeshwari Estate, Jogeshwari, Bombay-60.
- 29. Electromeck, 75, Worli, Bombay-18.
- *30. Sri Lakshmi Foundry, Patel Road, Coimbatore-9.
- *31. Subbiah Foundry, Avanashi Road, Pappanaickenpalayam, Coimbatore-1.
- *32. Nava Mani & Co., 2/246-48, Pappanaickenpalayam, Coimbatore-1.
- *33. Karthikeya Foundry, Post Box No. 207, Pappanaickenpalayam, Puliakulam Road, Coimbatore-1.
- *34. Texmo Industries, Mettupalayam Road, R. S. Puram Post, Coimbatore-2.
- *35. Nahan Foundry (Private) Ltd., Nahan, Himachal Pradesh.
- *36. The Jay Engineering Works Ltd., 183-A, Prince Anwar Shah Road, Calcutta-31.
- *37. India Supplies Engineering Works Ltd., Bihari Niwas, Kanpur.
- *38. New India Electric Corporation, 37-F, Parel Road Cross Lane, Chinchpokli, Bombay-12.

PRODUCER'S ASSOCIATIONS

- *1. Indian Electrical Manufacturers' Association, India Exchange, Calcutta-1.
- *2. The Small-Scale Electric Motor Manufacturers' Association, C/o Batliboi & Co., Forbes Street, Bombay-1.

IMPORTERS

- *1. Associated Electrical Industries (India) Private Ltd., Crown House, 6, Mission Row, Calcutta-1.
- *2. Balmer Lawrie and Co. (India) Ltd., 21, Netaji Subhas Road, Calcutta-1.
- 3. Batliboi and Co., Forbes Street, Bombay-1.
- †4. Chemicals and Machinery Private Ltd., Hamam House, Hamam Street, Bombay-1.
- *5. The Crompton Engineering Co. (Madras) Private Ltd., P.O. Box 205, Second Line Beach, Madras-1.
- *6. The English Electric Co. Ltd., D-3, Gillander House, 8, Netaji Subhas Road, Calcutta-1.
- *7. The General Electric Co. of India Private Ltd., Magnet House, Chittaranjan Avenue, Calcutta-13.
- *8. Mather and Platt Ltd., Hamilton House, 8, Graham Road, Ballard Estate, Bombay-1.
- *9. Refrigerators (India) Private Ltd., 59-C, Park Street, Calcutta.
- †10. Singer Sewing Machine Co., 207, Hornby Road, Bombay-1.
- †11. Greaves Cotton & Crompton Parkinson Private Ltd., 1, Forbes Street, Bombay-1.

- *12. Siemens Engineering & Manufacturing Co. of India Private Ltd., Stadium House, Vir Nariman Road, Bombay-1.
- *13. Voltas Ltd., 19, Graham Road, Ballard Estate, Bombay-1.
- 14. Dodsal Private Ltd., Mafatlal House, Backbay Reclamation, Bombay-1.
- †15. Air Conditioning Corporation Private Ltd., Construction House, Wittet Road, Ballard Estate, Bombay-1.

CONSUMERS

- 1. Ahmedabad Millowners' Association, Navrangpura, Post Box No. 7, Ahmedabad.
- 2. Laxmiratan Cotton Mills Co. Ltd., Bihari Niwas, Kanpur.
- *3. Power Tools & Appliances Co., 2, Dalhousie Square East, Calcutta-1.
- 4. Walchandnagar Industries Ltd., P.O. Walchandnagar, Poona District.
- *5. The Millowners' Association, Elphinstone Building, Vir Nagiman Road, Bombay-1.
- *6. Cooper Engineering Ltd., Satara Road, Distt. Satara.
- 7. Jyoti Ltd., Post Chemical Industries, Baroda-3.
- 8. Jhonston Pumps (India) Ltd., 2, Fairlie Place, Calcutta-1.
- *9. Hindustan Aircraft Private Ltd., Bangalore.
- *10. Controller of Stores, Northern Railway, Baroda House, New Delhi-1.
- *11. Controller of Stores, Southern Railway, Madras.
- 12. Controller of Stores, Western Railway, Churchgate, Bombay.
- *13. Chittaranjan Locomotive Works, Chittaranjan.
- *14. National Machinery Manufacturers Ltd., Kalwe, Thana.
- 15. Central India Machinery Manufacturing Co. Ltd., P.O. Birlanagar, Gwalior.
- *16. Tata Engineering & Locomotive Co. Ltd., Bombay House, Bruce Street, Bombay-1.
- 17. Mahindra & Mahindra Ltd., Gateway Building, Apollo Bunder, Bombay-1.
- 18. Jay Engineering Works Ltd., 183-A, Prince Anwar Shah Road, Dhakuria, Calcutta-31.
- *19. Associated Cement Companies Ltd., 121, Queen's Road, Bombay-1.
- *20. Hindustan Machine Tools Ltd., Jalahalli, P.O., Bangalore.
- *21. Phaltan Sugar Works Ltd., Sakharwadi, Distt. North Satara.
- 22. Godavari Sugar Mills Ltd., Lakshmiwadi, Distt. Ahmednagar.
- †23. Voltas Ltd., 19, Graham Road, Ballard Estate, Bombay-1.

PROSPECTIVE PRODUCERS

- *1. Heavy Electricals Ltd., Govindpura, Post Box No. 46, Bhopal.
- 2. C. Sundaram, 5-37, Gopalpuram, Coimbatore.
- 3. Balasubramania Foundry, Patel Road, Coimbatore.
- 4. Vasant Engineering Ltd., Pratapnagar, Baroda.
- 5. Ramakrishna Metal & Alloy Industries, Sardar Patel Road, Coimbatore.
- 6. Vijaya Foundry, Pappanaickenpalayam, Coimbatore.
- 7. Engineering Works of India (Private) Ltd., 20, Ultadanga Road, Calcutta-4.

- *8. Government Electric Factory, Post Box No. 579, Mysore Road, Bangalore-2.
- 9. Best & Company Private Ltd., 13/15, North Beach Road, Post Box No. 63, Madras-1.
- 10. Calcutta Fan Works Private Ltd., 19-B, Chowringhee Road, Calcutta-13.
- 11. Kasturi Engineers Ltd., 8/4, Avanashi Road, Coimbatore.
- 12. Jaura Engineering Works Private Ltd., 24, Industrial Area, Chandigarh.
- 13. Broadway Engineering Transport Co., 5/5, Old Post Office Road, Coimbatore.
- 14. Sri Krishna Foundry, Pappanaickenpalayam, Coimbatore-1.
- 15. Engineering Products Private Ltd., Ghodbunder Road, Jogeshwari, Bombay-60.
- *16. Bharat Techno-Mechanical Industries (Private) Ltd., Maneklal Road, Navsari, Dist. Surat.
- 17. Modern Engineering Moulding Co., Near Kalyan Mills, Narode Road, Ahmedabad.
- 18. Hindkamal Electric Motors Ltd., 606/4, Opp. Ramnath Mahadeo, Raipura, Ahmedabad.
- 19. Govardhan Engineering Industries, Ukkadam, South Coimbatore.
- 20. National Electric Appliances Co., 43, Biren Rai Road, East Behala, Calcutta-34.
- *21. Ganesh Flour Mills Co. Ltd., Post Box No. 1025, Subzi Mandi, Delhi-6.
- 22. Beegee Corporation (Private) Ltd., The Mall, Patiala.
- *23. Matchwel Electricals (India) Ltd., Off Nagar Road, P.O. Yeravda, Poona-6.
- 24. General Engineering Co., Patel Road, Coimbatore.
- *25. Kumar Industries, Edathara Post, Palghat, Kerala State.
- 26. Khalsa Foundry and Workshop C. I. S. Ltd., Sultanpur Lodhi, Punjab.
- 27. Thaker Engineering Corporation, Fort Road, Cannanore, Kerala.

GOVERNMENT DEPARTMENTS

- *1. The Senior Industrial Adviser, Development Wing, Udyog Bhavan, Maulana Azad Road, New Delhi.
- *2. The Development Commissioner, Small-Scale Industries, Udyog Bhavan, Maulana Azad Road, New Delhi.
- *3. The Director of Co-ordination & Statistics, Directorate General of Supplies & Disposals, National Insurance Building, Parliament Street, New Delhi-1.
- *4. The Director, Indian Standards Institution, Manak Bhavan, 9, Mathura Road, New Delhi.
- *5. The Director, Government Test House, 11/1, Judge's Court Road, Alipore, Calcutta-27.
- *6. The Director, National Physical Laboratory, Hillside Road, New Delhi-12.
- *7. The Director, Central Mining Research Station, Post Box No. 50, Dhanbad, Bihar.
- *8. The Iron & Steel Controller, 33, Netaji Subhas Road, Calcutta-1.
- *9. The Collector of Customs, Bombay.
- *10. The Collector of Customs, Calcutta.
- *11. The Collector of Customs, Madras.
- *12. The Collector of Customs, Cochin.

- *13. The Director, Central Water and Power Commission, Bikaner House, Shah-jahan Road, New Delhi.
- *14. Counsellor (Commercial) to the High Commission of India in the U.K., India House, Aldwych, London.
- 15. First Secretary (Commercial) to the Embassy of India, 262, Koblenzorstrasse, Bonn, W. Germany.
- 16. Director of Industries, Government of Madras, Fort St. George, Madras.
- *17. Director of Industries, Directorate of Industries (Statistical Cell), Government of West Bengal, 11A, Hastings Street, Calcutta-1.
- *18. Director of Industries, Government of Maharashtra, Sachivalaya Annexe, Bombay-32.
- 19. Director of Industries, Government of Gujarat, Ahmedabad.
- *20. Director of Industries, Government of Mysore, Vidhan Soudh, Bangalore.
- *21. Director of Industries, Government of East Punjab, Chandigarh.
- *22. The Chief Secretary to the Government of Andhra Pradesh, Hyderabad.
- †23. The Chief Secretary to the Government of Assam, Shillong.
- 24. The Chief Secretary to the Government of Bihar, Patna.
- 25. The Chief Secretary to the Government of West Bengal, Calcutta.
- 26. The Chief Secretary to the Government of Gujarat, Ahmedabad.
- 27. The Chief Secretary to the Government of Jammu and Kashmir, Srinagar.
- 28. The Chief Secretary to the Government of Kerala, Trivandrum.
- †29. The Chief Secretary to the Government of Madhya Pradesh, Bhopal.
- 30. The Chief Secretary to the Government of Madras, Madras.
- †31. The Chief Secretary to the Government of Maharashtra, Bombay.
- *32. The Chief Secretary to the Government of Mysore, Bangalore.
- †33. The Chief Secretary to the Government of Orissa, Bhubaneshwar.
- 34. The Chief Secretary to the Government of East Punjab, Chandigarh.
- 35. The Chief Secretary to the Government of Rajasthan, Jaipur.
- *36. The Chief Secretary to the Government of Uttar Pradesh, Lucknow.
- †37. The Chief Commissioner, Delhi Administration, Delhi.
- 38. The Chief Commissioner, Himachal Pradesh, Simla.

RAW MATERIAL SUPPLIERS

- *1. Dr. Beck & Co. (India) Private Ltd., Gateway Building, Apollo Bunder, Bombay-1.
- *2. Devidayal Stainless Steel Industries Private Ltd., Darukhana, Reay Road, Bombay-10.
- *3. The Tata Iron & Steel Co. Ltd., Bombay House, Bruce Street, Bombay-1.
- *4. Sankey Electrical Stampings Private Ltd., Wakefield House, Sprott Road, Ballard Estate, Bombay-1.
- *5. The Indian Cable Co. Ltd., 9, Hare Street, Calcutta-1.
- *6. Devidayal Cable Industries Private Ltd., Darukhana, Reay Road, Bombay-10.
- 7. Electrical Industries Corporation, 33, Brabourne Road, Calcutta-1.
- 8. National Insulated Cable Co. of India Ltd., 4, Dalhousie Square East, Calcutta-1.
- *9. Sri Shakti Trading Company, Bansilal Motilal Mansion, 22, Apollo Street, Bombay-1.

10. Hindustan Transmission Products Private Ltd., Chandidi, Kurla Vihar Road, Greater Bombay-70.
11. Hindustan Wire Products Private Ltd., Patiala, East Punjab.
- *12. Orient Steel & Wire Industries Private Ltd., New Industrial Township, Faridabad.
13. Commercial Bureau, Bombay Mutual Building, Bombay-1.
- *14. Beni Engineering Works, Ltd., 1, Crooked Lane, Calcutta-1.
- *15. British India Electric Construction Co. Ltd., 6, Mayurbhanj Road, Calcutta-23.
- *16. The Crompton Engineering Co. (Madras) Private Ltd., Second Line Beach, Post Box No. 205, Madras-1.
- *17. Greaves Cotton & Crompton Parkinson Private Ltd., 1, Forbes Street, Post Box No. 91, Bombay-1.
18. Jay Engineering Works Ltd., 183-A, Prince Anwar Shah Road, Calcutta-31.
- *19. National Engineering Industries Ltd., (Bearing Division), Jaipur.



APPENDIX II
(Vide Paragraph 3.2)

List of electric motor manufacturing and other factories visited by the Commission and its Officers

Sl. No.	Name of the factory	Names of Members of the Commission and Officers who visited the factory	Date of visit
1	2	3	4
1	Best and Co. Pvt. Ltd., Madras.	Chairman and Dr. S. K. Muranjan and Shri J. N. Dutta, Members	16th January, 1961.
2	Bharat Bijlee Ltd., Bombay	Chairman and Dr. S. K. Muranjan and Shri J. N. Dutta, Members Shri B. R. Sehgal, Secretary and Shri Hari Bhushan, Technical Director (Engineering & Metallurgy).	22nd February, 1961. 23rd January, 1961.
3	Crompton Parkinson (Works) Pvt. Ltd., Bombay	Chairman and Dr. S. K. Muranjan and Shri J. N. Dutta, Members Shri Hari Bhushan, Technical Director (Engineering & Metallurgy) Shri A. K. Banerjee, Assistant Cost Accounts Officer	22nd February, 1961. 25th January, 1961. January/February, 1961.
4	National Electrical Industries Ltd., Bombay	Shri B. R. Sehgal, Secretary and Shri Hari Bhushan, Technical Director (Engineering & Metallurgy). Shri S. R. Mallya, Assistant Cost Accounts Officer	23rd January, 1961. January/February, 1961.
5	Alpha Electric and Engineering Co. Ltd., Bombay. 6 Spartan Electricals, Bombay.	Chairman, Shri J. N. Dutta, Member and Shri Hari Bhushan, Technical Director (Engineering & Metallurgy).	25th February, 1961.
7	Motor and Machinery Manufacturers Ltd., Calcutta.	Shri J. N. Dutta, Member Shri Hari Bhushan, Technical Director (Engineering & Metallurgy)	29th December, 1960. 7th January, 1961.
8	Associated Electrical Industries Manufacturing Co. Pvt. Ltd., Calcutta.	Shri J. N. Dutta, Member Shri Hari Bhushan, Technical Director (Engineering & Metallurgy)	29th December, 1960. 5th January, 1961.

1

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			4
1	2	3	4
9	Electric Construction and Equipment Co. Ltd., Calcutta.	Shri Hari Bhushan, Technical Director (Engineering & Metallurgy)	4th January, 1961.
10	British India Electric Construction Co. Ltd., Calcutta.	Ditto.	5th January, 1961.
11	The General Electric Co. of India (Mfg.) Pvt. Ltd., Calcutta.		
12	Orient General Industries Ltd., Calcutta.	Ditto.	6th January, 1961.
13	The India Electric Works Ltd., Calcutta.		
14	Kinloch Electric Co. Ltd., Bangalore.	Shri U. R. Padmanabhan, Cost Accounts Officer	January/February, 1961.
15	Indian Cable Co. Ltd., Jamshedpur.	Shri Hari Bhushan, Technical Director (Engineering & Metallurgy)	12th January, 1961.
16	Tata Iron & Steel Co. Ltd., Jamshedpur.	Ditto.	13th January, 1961.
17	Sankey Electrical Stampings Pvt. Ltd., Bombay.		25th January, 1961.



APPENDIX III

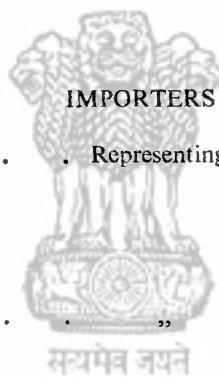
(Vide Paragraph 3.3)

List of persons who attended the public inquiry on 28th February 1961

PRODUCERS

1. Shri V. V. Dhume . . .	} Representing	Crompton Parkinson (Works) Private Ltd., Haines Road, Worli, Bombay-18.
2. " M. J. Desai . . .		
3. " S. G. Padhye . . .		
4. " A. K. Bose . . .		
5. " J. S. Zaveri . . .	}	Bharat Bijlee Ltd., Udyognagar, Bombay-22.
6. " J. R. Danani . . .		
7. " N. W. Gurjar . . .	" "	Kirloskar Electric Co. Ltd., Post Box No. 1017, Bangalore-3; <i>and</i>
8. " R. L. Kirloskar . . .	}	Indian Electrical Manufacturers' Association, India Exchange (7th Floor), Calcutta-1.
9. " P. R. Mundewadi . . .		
10. " A. D. Alawani . . .		
11. " P. N. Dandekar . . .	" "	Kirloskar Electric Co. Ltd., Post Box No. 1017, Bangalore-3.
12. Mr. J. E. Reid . . .	" "	The General Electric Co. of India (Manufacturing) Pvt. Ltd., 58, Taratala Road, Garden Reach, Calcutta-24.
13. Shri M. K. Patel . . .	" "	Jyoti Ltd., Baroda-3.
14. " N. Krishnan . . .	" "	British India Electric Construction Co. Ltd., 6, Mayurbhanj Road, Calcutta-23.
15. " T. V. A. Krishnan . . .	" "	Hindustan Electric Co. Ltd., Faridabad, East Punjab.
16. " L. P. Shah . . .	" "	Electric Construction and Equipment Co. Ltd., 9, Kaliprasanna Singhee Rd., Calcutta-2.
17. " D. G. Goverdhan . . .	" "	Associated Electrical Industries Manufacturing Co. Pvt. Ltd.; <i>and</i>
		Associated Electrical Industries (India) Private Ltd., Crown House, 6, Mission Row, Calcutta-1.

18. Shri B. S. Bhagwatt	Representing	National Electrical Industries Ltd., Industrial Estate, Lalbaug, Bombay-12.
19. „ W. P. Karnik	}	
20. „ V. Guruswamy	„	Eastern Electrical Co. Pvt. Ltd., Post Box No. 21, Singanallur, Coimbatore-5.
21. „ P. V. Mehta	„	Alpha Electric and Engineering Co., 30, Calicut Street, Ballard Estate, Bombay-1.
22. „ M. B. Bajaj	„	Hind Electric, Shroff Wadi, Opp. Mazgaon Post Office, Bombay-10.
23. „ P. R. Deshpande	}	Indian Electrical Manufacturers' Association, India Exchange (7th Floor), Calcutta-1.
24. „ D. K. Sinha	}	
25. „ M. S. Kapadia	„	Small Scale Electric Motor Manufacturers' Association, C/o Batliboi & Co., Forbes Street, Fort, Bombay-1.



IMPORTERS

1. Shri S. P. Mathur	Representing	Siemens Engineering and Manufacturing Co. of India Pvt. Ltd., Stadium House, Veer Nariman Road, Bombay-1.
2. „ S. T. Naik	„	Mather and Platt Ltd., Hamilton House, Graham Road, Ballard Estate, Bombay-1.

CONSUMERS

1. Shri I. A. Moses	Representing	The Millowners' Association, Elphinstone Building, Veer Nariman Road, Bombay-1.
2. „ R. L. N. Vijayanagar	}	
3. „ M. K. Gupte	„	The Gold Mohur Mills Ltd., Dadar, Bombay-14.
4. „ A. R. Parekhji	„	The Shree Niwas Cotton Mills Ltd., Delisle Road, Bombay-13.

RAW MATERIAL SUPPLIERS

1. Shri V. S. Deshpande	Representing	Sankey Electrical Stampings Private Ltd., Wakefield House, Sprott Road, Ballard Estate, Bombay-1.
2. „ N. R. Banerjee	}	
3. „ Alakwadi	}	
4. Mr. F. R. Lasyman	}	

5. Shri S. N. Sircar	} Representing	The Tata Iron and Steel Co. Ltd., Bombay House, Bruce Street, Bombay-1.
6. „ S. R. Subbaraman		
7. „ C. V. Panshikar	„	The Indian Cable Co. Ltd., 9, Hare Street, Calcutta-1.
8. „ R. Aggarwal	„	Devidayal Cable Industries Private Ltd., Gupta Mills Estate, Reay Road, Bom- bay-10.
9. „ B. K. Maheswari	„	National Engineering Indus- tries Ltd. (Bearing Division), Jaipur.

GOVERNMENT DEPARTMENTS

1. Shri K. N. Ramaswamy	Representing	Development Wing, Ministry of Commerce and Industry, Udyog Bhavan, Maulana Azad Road, New Delhi.
2. „ S. L. Sharma	„	Development Commissioner, Small-Scale Industries, Udyog Bhavan, Maulana Azad Road, New Delhi.
3. Lt. Col. O. G. Eapen	„	Iron and Steel Controller, 33, Netaji Subhas Road, Calcutta-1.
4. Shri R. Natarajan	„	Director-General of Supplies and Disposals, National Insurance Building, Par- liament Street, New Delhi.
5. „ D. S. Godbole	} „	Director of Industries, Gov- ernment of Maharashtra, Sachivalaya Annex, Bom- bay-32.
6. „ P. K. Raut		
7. „ B. M. Safiulla	„	Government of Mysore, Ban- galore.

APPENDIX IV
(Vide Paragraph 6.1)

*Statement showing the present annual installed capacity of
 electric motor manufacturing units*

Sl. No.	Name of the unit	Annual installed capacity on single shift (H.P.)
1	2	3
1.	Crompton Parkinson (Works) Pvt. Ltd., Bombay	216,000
2.	Associated Electrical Industries Mfg. Co. Pvt. Ltd., Calcutta	83,920
3.	National Electrical Industries Ltd., Bombay	20,000
4.	Kirloskar Electric Co. Ltd., Bangalore	180,000
5.	P. S. G. & Sons Charity Industrial Institute, Coimbatore	42,000
6.	British India Electric Construction Co. Ltd., Calcutta	26,320
7.	Electric Construction and Equipment Co. Ltd., Calcutta	10,000
8.	Bharat Bijlee Ltd., Bombay	36,000
9.	Jyoti Ltd., Baroda	99,000
10.	General Electric Co. of India (Mfg.) Pvt. Ltd., Calcutta	80,000
11.	Motor and Machinery Manufacturers Ltd., Calcutta	66,000
12.	Hindustan Electric Co. Ltd., Bombay (Factory—Faridabad)	65,200
13.	Argus Engineering Co. Ltd., Coimbatore	6,000
14.	Eastern Electrical Co. Ltd., Coimbatore	12,000
15.	Orient General Industries Ltd., Calcutta	20,000
16.	P. Govindaraj & Sons (P) Ltd., Madras	6,000
17.	Ogale Glass Works Ltd., Ogalewadi	600
18.	Ramakrishna Mission Vidyalaya Industrial Section, Coimbatore	5,000
19.	Best & Co. Pvt. Ltd., Madras	20,000

1	2	3
20.	Jay Chand Engineering Works, Coimbatore . . .	3,000
21.	Coimbatore Premier Corporation Pvt. Ltd., Coimbatore . . .	9,000
22.	Engineering Products of India, Bombay . . .	36,000
23.	Broadway Engineering & Transport Co., Coimbatore . . .	5,000
24.	Karthikeya Foundry, Coimbatore . . .	5,000
25.	Vijaya Foundry, Coimbatore . . .	9,000
26.	Beegee Corporation (P) Ltd., Patiala . . .	70,000
27.	Texmo Industries, Coimbatore . . .	5,000
TOTAL . . .		1,136,040



APPENDIX V

(*Vide Paragraph 6.3*)

I—Statement showing production of electric motors during 1958

Sl. No.	Name of the firm	Upto 30 h.p.		Above 30 to 50 h.p.		Above 50 to below 100 h.p.		100 to below 200 h.p.		200 h.p. and above		Total	
		H.P. Nos.	H.P. Nos.	H.P. Nos.	H.P. Nos.	H.P. Nos.	H.P. Nos.	H.P. Nos.	H.P. Nos.	H.P. Nos.	H.P. Nos.	H.P. Nos.	H.P. Nos.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Associated Electrical Industries Manufacturing Co. Pvt. Ltd., Calcutta.	32,345	4,999	1,824	40	1,333	18	120	1	...	...	35,622	5,058
2	Crompton Parkinson (Works) Pvt. Ltd., Bombay.	114,839	19,272	5,151	125	315	5	...	...	...	...	120,305	19,402
3	Kirloskar Electric Co. Ltd., Bangalore.	155,251	22,995	22,405	534	14,620	201	2,170	15	...	...	194,446	23,745
4	National Electrical Industries Ltd., Bombay.	8,633	2,272	••	••	••	••	••	••	...	...	8,633	2,272
5	The General Electric Co. of India (Manufacturing) Pvt. Ltd., Calcutta.	37,522	5,447	3,860	88	65	1	...	...	...	...	41,447	5,536
6	Jyoti Ltd., Baroda	34,448	7,282	2,880	67	1,680	25	600	4	225	...	39,833	7,379
7	Motor and Machinery Manufacturers Ltd., Calcutta.	43,030	7,609	...	...	...	...	...	...	...	...	43,030	7,609

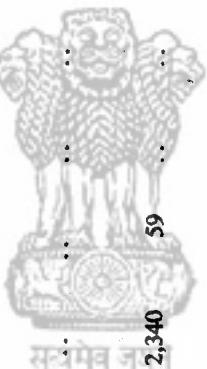
3	P. S. G. and Sons' Char- ity Industrial Institute, Coimbatore.	29,232	6,420	29,232	6,420
9	Bharat Bijlee Ltd., Bombay.	24,513	4,807	1,095	26	180	3	..	..	..	..	..	..	..	..	..	..	25,788	4,836
10	Eastern Electrical Co. Ltd., Coimbatore.	3,996	840	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3,996	840
11	Electric Construction and Equipment Co. Ltd., Calcutta.	5,942	913	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5,942	913
12	British India Electric Construction Co. Ltd., Calcutta.	44,314	5,457	440	11	..	..	..	..	..	..	..	..	..	..	..	..	44,734	5,468
13	Argus Engineering Co. Ltd., Coimbatore.	2,386	337	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2,386	337
14	Hindustan Electric Co.	27,661	4,880	410	10	..	..	..	..	..	..	..	..	..	..	..	..	28,071	4,890
15	The India Electric Works Ltd., Calcutta.	395	576	..	..	..	..	..	..	..	..	..	..	..	..	..	..	395	576
16	P. Govindaraj and Sons Pvt. Ltd., Madras.	1,707	335	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1,707	335
17	Orient General Indus- tries Ltd., Calcutta.	8,748	3,273	..	..	..	..	..	..	..	..	..	..	..	..	..	..	8,748	3,273
18	Ogale Glass Works Ltd., Oaglevadi.	480	146	..	..	..	..	..	..	..	..	..	..	..	..	..	..	480	146
19	Coimbatore Premier Corporation Private Ltd., Coimbatore.	6,268	1,337	..	..	..	..	..	..	..	..	..	..	..	..	..	..	6,268	1,337

TOTAL • • 581,710 99,197 38,005 901 18,193 253 2,890 20 225 1 641,083 100,372

If—Statement showing production of electric motors during 1959

Sl. No.	Name of the firm	Upto 30 h.p.		Above 30 to 50 h.p.		Above 50 to below 100 h.p.		100 to below 200 h.p.		200 h.p. & above		Total	
		H.P.	Nos.	H.P.	Nos.	H.P.	Nos.	H.P.	Nos.	H.P.	Nos.		
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Associated Electrical Industries Manufacturing Co. Pvt. Ltd., Calcutta.	38,918	5,381	4,544	106	...	...	...	...	...	43,462	5,487	42
2	Crompton Parkinson (Works) Pvt. Ltd., Bombay.	122,873	23,471	6,645	159	660	8	...	...	...	130,178	23,638	
3	Kirloskar Electric Co. Ltd., Bangalore.	105,815	14,352	26,451	636	22,210	321	6,110	40	...	...	160,586	15,349
4	National Electrical Industries Ltd., Bombay.	6,653	1,550	...	...	...	...	...	...	...	6,653	1,550	
5	The General Electric Co. of India (Manufacturing) Pvt. Ltd., Calcutta.	40,397	5,876	3,975	85	1,255	20	...	...	...	45,627	5,981	

6	Jyoti Ltd., Baroda	37,101	7,557	7,380	146	3,680	45	1,225	8	..	..	..	49,386	7,756
7	Motor & Machinery Manufacturers Ltd., Calcutta.	22,071	7,016	..	..	..	..	..	..	..	..	..	22,071	7,016
8	P. S. G. & Sons' Charity Industrial Institute, Coimbatore.	31,152	7,859	..	..	..	..	..	..	..	..	..	31,152	7,859
9	Bharat Bijlee Ltd., Bombay.	18,097	3,361	2,244	56	255	6	..	..	..	..	..	20,596	3,423
10	Eastern Electrical Co. Ltd., Coimbatore.	3,058	686	..	..	..	..	..	..	..	..	..	3,058	686
11	Electric Construction & Equipment Co. Ltd., Calcutta.	3,626	1,019	..	..	..	..	..	..	..	..	..	3,626	1,019
12	British India Electric Construction Co. Ltd., Calcutta.	33,217	4,546	2,340	59	..	..	..	..	..	..	..	35,557	4,605
13	Argus Engineering Co. Ltd., Coimbatore.	481	73	..	..	..	..	..	..	..	..	..	481	73
14	Hindustan Electric Co. Ltd., Bombay.	22,064	3,757	700	15	..	..	150	1	..	..	..	22,914	3,773
15	The India Electric Works Ltd., Calcutta.	491	661	491	661
16	P. Govindaraj & Sons Pvt. Ltd., Madras.	2,989	558	2,989	558



Statement II—contd.

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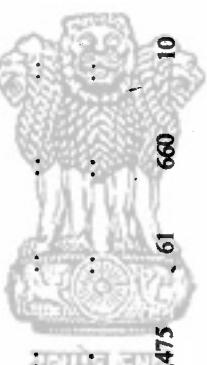
1	2	3	4	5	6	7	8	9	10	11	12	13	14
17	Orient General Industries Ltd., Calcutta.	1,320	2,140	1,320	*2,140
18	Ogale Glass Works Ltd., Ogalevadi.	..	..	..	..	..	..	..	..	..	..	..	..
19	Coimbatore Premier Corporation Pvt. Ltd., Coimbatore.	8,163	1,754	..	..	..	..	..	..	..	..	8,163	1,754
20	Sri Ramakrishna Mission Vidyalya Industrial Section, Coimbatore.	1,757	377	..	..	..	..	..	..	..	..	1,757	377
21	Broadway Engineering & Transport Co., Coimbatore.	1,982	645	..	..	..	..	..	..	..	..	1,982	645
22	Engineering Products Pvt. Ltd., Bombay.	N.A.	375	..	..	..	..	..	..	..	..	N.A.	375
23	Vijaya Foundry, Coimbatore.	N.A.	388	..	..	..	..	..	..	..	..	N.A.	388
	Total	502,225	93,402	54,279	1,262	28,060	400	7,485	49	..	..	592,049	95,113

III.—Statement showing production of electric motors during 1960 (January-October)

Sl. No.	Name of the Firm	Upto 30 h.p.	Above 30 to 50 h.p.		Above 50 to below 100 h.p.		100 to below 200 h.p.		200 h.p. and above		Total
			H.P.	Nos.	H.P.	Nos.	H.P.	Nos.	H.P.	Nos.	
1			2	3.	4	5	6	7	8	9	10
1	Associated Electrical Industries Ltd., Calcutta.	44,621	4,979	3,234	70	3,024	43	..	..	..	50,879
2	Crompton Parkinson (Works) Private Ltd., Bombay.	125,406	25,605	4,334	105	1,725	26	..	..	..	131,465
3	Kirloskar Electric Co. Ltd., Bangalore.	109,350	18,672	23,505	557	24,525	347	6,409	46	655	2
4	National Electrical Industries Ltd., Bombay.	5,863	1,873	..	..	..	..	..	..	..	5,863
5	The General Electric Co. of India (Manufacturing) Private Ltd., Calcutta.	37,485	4,869	8,015	185	2,150	33	..	..	..	47,650
6	Jyoti Ltd., Baroda	24,992	5,642	7,774	228	5,125	71	2,090	15	420	2
											5,958

Statement III—contd.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	
7	Motor and Machinery Manufacturers Ltd., Calcutta.	14,564	6,735	..	..	..	..	..	..	..	..	14,564	6,735
8	P. S. G. and Sons' Charity Industrial Institute, Coimbatore.	21,297	5,942	..	..	..	..	..	..	..	..	21,297	5,942
9	Bharat Bijlee Ltd., Bombay.	16,951	3,755	610	15	180	3	..	..	..	..	17,741	3,773
10	Eastern Electrical Co. Ltd., Coimbatore.	3,625	807	..	..	..	..	..	..	..	..	3,625	807
11	Electric Construction and Equipment Co. Ltd., Calcutta.	5,979	1,251	..	..	..	..	..	..	..	..	5,979	1,251
12	British India Electric Construction Co. Ltd., Calcutta.	30,538	3,950	2,475	61	660	10	..	..	..	..	33,673	4,021
13	Argus Engineering Co. Ltd., Coimbatore.	284	46	284	46
14	Hindustan Electric Co. Ltd., Bombay.	12,377	2,050	820	20	160	2	120	1	..	..	13,477	2,073
15	P. Govindaraj and Sons Private Ltd., Madras.	2,018	448	..	..	..	..	..	..	..	..	2,018	448
16	Orient General Industries Ltd., Calcutta.	4,078	8,133	4,078	8,133
17	Ogale Glass Works Ltd., Oaglevadi.	1,490	319	1,490	319



APPENDIX VI

[Vide Paragraph 10.2]

Statement showing rates of excise duty on Electric Motors and parts thereof

Electric Motors all sorts and parts thereof namely :—

- | | |
|---|--------------------------------------|
| (1) those designed for use in circuits of less than 10 amperes and at a pressure not exceeding 250 volts. | Fifteen per cent. <i>ad valorem.</i> |
| (2) those designed for use in circuits at a pressure exceeding 400 volts and | |
| (i) with a rated capacity not exceeding 10 H.P. | Ten per cent. <i>ad valorem.</i> |
| (ii) exceeding 10 H.P. | Five per cent. <i>ad valorem.</i> |
| (3) all others | Fifteen per cent. <i>ad valorem.</i> |
| (4) parts of electric motors | Fifteen per cent. <i>ad valorem.</i> |

NOTES.—1. By the Ministry of Finance (Department of Revenue) Notification No. 117/60-Central Excises, dated 24th September, 1960, the Central Government has exempted electric motors having current consumption of not more than 2·5 watts per hour and ordinarily meant for fitting as integral part of electric clocks, from the whole of the excise duty leviable thereon.

2. By the Ministry of Finance (Department of Revenue) Notification No. 84/60-Central Excises, dated 10th June, 1960, the Central Government has fixed the tariff values for electric motors of the single or split phase type as per the following schedule :—

SCHEDEULE

Item No. under First Schedule to the C. E. & Salt Act, 1944 under which the article is chargeable	Horse Power of electric motor	Tariff value
1	2	3
31(1)	(i) Motors not exceeding 1/20 H.P.	Rs. 110
	(ii) Exceeding 1/20 H.P. but not exceeding 1/12 H.P.	120
	(iii) Exceeding 1/12 but not exceeding 1/6 H.P.	130

1	2	3
(iv) Exceeding 1/6 but not exceeding 1/3 H.P.		Rs. 160
(v) Exceeding 1/3 but not exceeding 1/2 H.P.		200
(vi) Exceeding 1/2 but not less than 1 H.P.		260
(vii) Motors of 1 H.P.		300
(viii) Exceeding 1 H.P. but not exceeding 2 H.P.		400

Explanation.—The horse power is equivalent to 0.7457 kilowatts. The rating shall be the continuous rating in accordance with Indian Standard Specification No. 996-1959.

3. By the Ministry of Finance (Department of Revenue) Notification No. 85/60-Central Excises, dated 10th June, 1960, the Central Government has fixed the tariff values for 3 phase squirrel cage electric motors as per the following schedule :—

SCHEDULE

Item No. under First Schedule to the C. E. & Salt Act under which the article is ordinarily chargeable	Horse Power of electric motor	Synchronous speed and tariff values		
		Exceeding 1400 R.P.M.	Exceeding 900 R.P.M.	Not ex- ceeding 900 R.P.M.
Tariff values per motor				
1	2 सर्वमन्त्र नियन्त्रण	3	4	5
31(2) (i)	(i) Not exceeding 1 H.P.	Rs. 300	Rs. 350	Rs. 400
	(ii) Exceeding 1 H.P. but not exceeding 2 H.P.	350	400	500
	(iii) Exceeding 2 H.P. but not exceeding 3 H.P.	400	480	600
	(iv) Exceeding 3 H.P. but not exceeding 4 H.P.	450	550	650
	(v) Exceeding 4 H.P. but not exceeding 5 H.P.	520	620	750
	(vi) Exceeding 5 H.P. but not exceeding 6 H.P.	600	700	800
	(vii) Exceeding 6 H.P. but not exceeding 8 H.P.	660	820	1,000

1	2	3	4	5
		Rs.	Rs.	Rs.
31(2)(ii)	(viii) Exceeding 8 H.P. but not exceeding 10 H.P. . .	800	1,000	1,200
	(ix) Exceeding 10 H.P. but not exceeding 13 H.P. . .	1,000	1,200	1,400
	(x) Exceeding 13 H.P. but not exceeding 15 H.P. . .	1,100	1,300	1,600
	(xi) Exceeding 15 H.P. but not exceeding 20 H.P. . .	1,400	1,700	2,000

Explanation.—The horse power is equivalent to 0.7457 kilowatts. The rating shall be the continuous maximum rating in accordance with Indian Standard Specification No. 325-1959.

4. By the Ministry of Finance (Department of Revenue) Notification No. 116/60-Central Excises, dated 24th September, 1960, the Central Government has fixed the tariff values for 3 phase squirrel cage motors of less than $\frac{1}{2}$ h.p. as per the following schedule :—

SCHEDULE

Item No. under First Schedule to the C. E. and Salt Act, 1944 under which the article is chargeable	Horse Power of the Electric Motor	Tariff value
31(2)	(i) Motors not exceeding 1/20 h.p.	Rs. 110
	(ii) Exceeding 1/20 h.p. but not exceeding 1/12 h.p.	120
	(iii) Exceeding 1/12 h.p. but not exceeding 1/6 h.p.	130
	(iv) Exceeding 1/6 h.p. but not exceeding 1/3 h.p.	160
	(v) Exceeding 1/3 h.p. but less than 1/2 h.p.	200

Explanation.—The horse power is equivalent to 0.7457 kilowatts. The rating shall be the continuous maximum rating in accordance with Indian Standard Specification No. 325-1959.

5. Under Government of India, Ministry of Finance (Department of Revenue), Notification No. 28/60-Central Excises, dated the 1st March, 1960, as subsequently amended by Notification No. 71/60-Central Excises, dated the 28th May, 1960, all parts of electric motors other than stators and rotors, are exempt from the payment of the excise duty leviable thereon.

6. Under Government of India, Ministry of Finance (Department of Revenue), Notification No. 68/60-Central Excises, dated the 20th April, 1960, electric motors, all sorts, upto the quantity prescribed in column (1) of the table hereto annexed, cleared by any manufacturer for home consumption in a month, are exempt from the payment of the percentage of the excise duty specified in the corresponding entry in column (2) of the said table :

Provided that the exemption shall not apply to any factory which in any of the twelve months immediately preceding the month in which the clearance is made, has exceeded an output of 300 H.P. of such electric motors.

TABLE

Quantity (1)	Amount (2)
On the first 100 H.P.	20 per cent of the total duty.
On the next 100 H.P.	10 per cent of the total duty.



APPENDIX VII

[Vide Paragraph 11.2]

Summary of import control policy for the different types of electric motors and their parts since the licensing period October '58—March '59

(a) *Fractional h.p. motors including motors upto one h.p. suitable for D.C. supply or single phase*

During October '58—March '59 licensing period established importers were granted a quota of 25 per cent for imports from soft currency areas. Licences were not valid for import of second hand machinery, although requests from users were considered on an *ad hoc* basis. During the next licensing period (April—September '59) the same policy was continued but the quota for established importers was increased to 40 per cent. Further, quota licences were issued subject to the condition that sales were effected by established importers to actual users only, at prices not exceeding 25 per cent over the landed cost. The same policy was continued during October '59—March '60 and April—September '60 licensing periods. For the licensing period October '60—March '61 the quota for established importers was reduced to 25 per cent. The quota has been further reduced to 5% during the current licensing period.

(b) *A. C. 3 phase, squirrel cage motors upto 30 h.p. conforming to details of construction and design as given below and slipring motors from 10 to 30 h.p. (i) Type—Standard/High Torque (including loom motors)/Smooth acceleration (ii) Voltage—200—550 (iii) Spindle—Horizontal or vertical (iv) Enclosure—Screen protected/drip-proof totally enclosed (including fan cooled)*

During October '58—March '59 licensing period no licences were granted to established importers for this item. But these types of motors were allowed clearance with machinery and equipment provided the motor shaft was directly coupled to the driving mechanism and the motors could be regarded as integral, or were built-in, built-on, flanged or geared so as to form an integral driving mechanism with the plant and machinery. Applications from pump manufacturers requiring vertical spindle hollow shaft motors of ratings not produced in the country were considered *ad hoc*. Actual user applications from collieries for flame-proof motors conforming to B.S.S. 741 of 1937 or its equivalent were considered *ad hoc*. Applications from actual users other than collieries were also considered, in consultation with the Development Wing, for import of flame-proof motors conforming to B.S.S. 741 of 1937 or its equivalent. The same policy has been continued during all the subsequent licensing periods.

(c) *Motors of the types mentioned in (b) but from 31 to 50 h.p.*

During October '58—March '59 licensing period no licences were granted to established importers for this item. But these were allowed clearance with machinery and equipment on the same conditions as set out for (b) above. Applications from actual users for import of flame-proof motors conforming to B.S.S. 741 of 1937 or its equivalent were considered in consultation with the Development Wing. The same policy has been continued in all the subsequent licensing period.

(d) *Other types of motors*

During the licensing period October '58—March '59 no licences were granted to established importers. Applications from actual users were considered, in consultation with the Development Wing, only for import of flame-proof motors conforming to B.S.S. 741 of 1937 or its equivalent. Applications from established importers for

import of spare parts against their imports of complete machinery were considered by the licensing authorities and licences were granted on a quota of 2½ per cent. of half of their best year's imports in the basic period, subject to the same conditions/restrictions as applied to licences issued for parts of motors. During the next licensing period (April—September '59) the same policy was pursued. Further, actual user applications from the textile industry for import of variable speed motors were considered on an *ad hoc* basis on the recommendations of the Textile Commissioner and in consultation with the Development Wing. The policy remained the same for the next three licensing periods except that during April—September '60, licences for spare parts were issued on an annual basis. During the current licensing period (April—September '61) the facility of actual user licences to the Textile industry has been extended to cover other non-flame proof motors not available locally.

(e) *Parts of motors*

During the licensing period October '58—March '59 established importers were granted a quota of 50 per cent. for imports of parts or alternatively 5 per cent. on imports of complete motors from dollar and soft currency areas. Licences were not valid for import of spare parts such as ball bearings, etc. This policy has been continued during all the subsequent licensing periods. Further, with effect from the April—September '59 licensing period, applications from sole selling agents of variable speed motors, who were not quota-holders of this sub-item for import of spare parts of motors, were considered *ad hoc* on the recommendations of the Textile Commissioner. With effect from October '59—March '60 licensing period, established importers were granted a quota of 60 per cent. for imports of parts and actual user applications from manufacturers of fractional horse-power motors for the import of condensers and centrifugal switches were considered on an *ad hoc* basis. With effect from April—September '60 licensing period, licences were issued subject to the condition that they would not be valid for import of motors in CKD condition. Further, licences were issued on an annual basis.



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